**WRITTEN ANSWERS TO STARRED AND UNSTARRED QUESTIONS SET FOR THE 7TH AUGUST, 2002

Electricity Generated by Various Fuels

†*341. SHRI KAPIL SIBAL:
SHRI RAJIV RANJAN SINGH 'LALAN':

Will the Minister of POWER be pleased to state:

(a) whether it is a fact that water, nuclear energy, coal, naphtha, oil gas and husk of sugarcane are used fuel for generation of electricity in the country;

(b) if not the different kinds of material used for generating electricity during March, 2000 to March, 2002; and

(c) the average cost of electricity generated by each of the above mentioned material used?

THE MINISTER OF POWER (SHRI SURESH PRABHU): (a) to (c) Electricity in India is generated through various sources, such as, coal, hydro gas, diesel, nuclear etc. Electricity is also available through renewable sources like wind, solar photovoltaic, biomass, energy from wastes, etc.

As on 31.03.2002, the insalled capacity from various sources was as follows:-

Type of Fuel	Installed Capacity (MW)
Hydro	26261.22
Coal	62130.89
Diesel	1134.83
Gas	11163.10
Nuclear	2720.00
Wind	1507.46
Solar Photovoltaic	54MW
Small Hydro (upto 25MW)	1437MW
Biomass Cogeneration	381 MW
Biomass Gassifier	51 MW
Energy recovery from wastes	22MW

**The sitting of the Rajya Sabha on Wednesday, the 7th August, 2002 was adjourned due to interruptions in the House. Answers to questions put down in the lists for that day were laid on the Table of the House on Monday, the 12th August, 2002.

†Original notice of the question was received in Hindi.

The per unit cost of generation of power from various sources (2000-01) was as follows:

Source	Paisa/Kwh
Coal	151*
Hydro	63*
Gas	220*
Naphtha	506*
Nuclear	82-295
Wind	225-275
Small Hydro	200-250
Biomass Power/Bagasse co-generation	150-275
Waste to energy	250-350
Solar Photovoltaic (depending upon size configuration, location etc.)	1200-2000

*All India weighted average.

The Government has undertaken a number of measures for accelerating the pace of hydropower development in the counry with the ultimate objective of fully developing the feasible hydro potential in the country, as this is a renewable source of energy with no fuel cost. As can be seen from the above table, the cost of generation from coal is quite low. The cost of generation from nuclear sources is expected to come down over time to international levels as the plans for having 20,000 MW of nuclear capacity by 2020 are implemented. Gas and Naphtha are relatively costly options.

The following are the salient features of the comprehensive strategy evolved for the full development of the hydro potential in the country:—

Central Electricity Authority has completed a ranking study of all the identified hydro potential sites in the major river basins of the country. This ranking study forms the basis for prioritizing the development of the hydro sites.

Active role of the states in selection, prioritization and monitoring of execution of projects specially in view of the critical responsibility of the States in land acquisition and rehabilitation and resettlement.

In pursuance of the ranking study an International Round Table is

being organized where developers, countries with srength in hydro power development, multi lateral agencies and financial institutions would be invited with the objective of identifying projects for the preparation of DPRs and subsequent development.

A Committee has been constituted under the Chairmanship of Shri Harish Salve, Solicitor General of India to suggest ways and means for increasing transparency and streamlining contract management in hydro projects. This is aimed at reduction in time and cost over runs associated with hydro projects and in turn to lower capital costs.

A Three Stage clearance process for new hydro projecs has been introduced. This facilitates thorough preparation of DPRs so as to minimize possibilities of geological surprises with land acquisition and proper development of infrastructure including roads and bridges being done in parallel after establishment of feasibility and commercial viability of a project. Development of necesary infrastructure before award of major contract packages is expected to result in reduction of the gestation period of hydro projects and consequently lower costs.

An effective system of review of catchment area treatment as well as compensatory afforestation has been introduced. In addition, a Special Purpose Vehicle (SPV) for compensatory afforestation has been planned which would create a land bank from which credits could be taken for large power projects. These measures are designed to take care of environmental concerns relating to large hydro projects.

Involvement of Panchayati Raj Institutions in Disaster Management

*342. SHRI LALU PRASAD: Will the Minister of HOME AFFAIRS be pleased to state:

(a) whether it is a fact that Government have taken some steps to involve the Panchayati Raj Institutions and urban local bodies in the mitigation and management of disasters; and

(b) if so, the details thereof?